REMARKS

This application has been carefully reviewed in light of the Office Action dated July 25, 1988. In order to advance prosecution of this case, Claims 1, 3, and 9-16 have been amended in order to further describe the inventive concept. Reconsideration and favorable action in this case is respectfully requested.

Claim 1 was rejected by the Examiner under 35 U.S.C. §103 over U.S. Patent No. 4,722,043 to Nagamine et al. The Nagamine patent reference discloses a programmable controller in which memory stores a first program (A) of the latter type and a second program (B) described in another program language such as Pascal or Fortran. The execution times for processing the first and second programs are set by first and second setting devices. A management device executes processing according to the first and second programs alternately for the periods of time set by the first and second setting device.

As clearly shown in FIGURE 5, in each period T, program A will be executed for the time period T_x. The remainder of the time period T is used executing the second program B. Hence, programs A and B share the processor's time, alternately being executed for time periods T_x and $T-T_x$.

The present invention as defined by Claim 1 differs greatly from the disclosure in the Nagamine patent reference. The present invention comprises a database memory having memory elements associated with data used by a plurality of programs. For example, program A may use data elements "Heat" and "Temp" during its execution. Program B may use data elements "Alarm1" and "Alarm2" in its execution. The database manager is operable to transfer data from the database memory to the programs only

when the relevant data is changed. Thus, for example, the database manager is operable to transfer the values of "Heat" and "Temp" to program A, only if those memory elements have changed in value since the last data transfer. Thus, valuable processing time may be conserved by eliminating unnecessary data processing when the data values are not changing.

The Nagamine patent reference neither illustrates nor makes obvious this novel feature. As the Examiner states in Office Action, the database management function for controlling the transfer of data is not shown in the Nagamine disclosure. Since the Nagamine disclosure does not show a database manager, it certainly does not show the specific novel approach to database management described and claimed in Applicant's patent application.

Claim 1 has been amended to more clearly define this inventive concept. Specifically, Claim 1 now states that the database managing means is operable to transfer data stored in one of the memory elements to one of the programs only if the data stored in the memory element has changed since a previous transfer of the data stored in the element. Since amended Claim 1 clearly distinguishes over the prior art cited by the Examiner, Applicant respectfully requests allowance thereof.

Claim 2 is dependent upon Claim 1, and therefore, Applicant respectfully requests allowance thereof.

Claim 3 has been amended to correct a typographical error. Since Claim 3 is dependent upon Claim 1, Applicant respectfully requests allowance thereof.

Claims 4-8 are also dependent upon Claim 1. Therefore, Applicant respectfully requests allowance thereof.

Claim 9 has been amended to more clearly define what is meant by a "communication program." Claim 9 reads that one of the programs comprises a communications program to provide data transfers between the database memory and the electronically controlled equipment. Applicant respectfully requests allowance of Claim 9.

Claim 10 was also rejected by the Examiner under 35 U.S.C. §112. The Examiner stated that it was not clear how the output program for display data will "graphically" display representations. Applicant is puzzled by this rejection, since a "graphic display" of data is a well-known term in the art describing the transformation of numeric data into graphs, such as pie charts and bar graphs. Nonetheless, if the Examiner would clarify his position on Claim 10, Applicant would make an attempt to further clarify its meaning. Since Claim 10 is dependent upon amended Claim 1, Applicant respectfully requests allowance thereof.

Claim 11 has been rejected by the Examiner under 35 U.S.C §103 over the Nagamine patent reference and 35 U.S.C. §112. Applicant has amended Claim 12 to more specifically and clearly describe the inventive concept. As described by Claim 11, the database manager receives data from a plurality of programs and stores the data in associated memory elements. Upon receiving requests for a transfer of the data stored in the memory elements, the data manager determines which, if any, of the data elements have changed in value since a previous transfer of data to the requesting program and transfers the data which has changed. For reasons described in connection with Claim 1, Applicant submits that Claim 11 clearly defines over the prior art, and respectfully requests allowance thereof.

Claim 12 has been amended to more clearly define the inventive concept wherein each data element has status bits associated with each memory element for each of the programs

which accesses that memory element. Claim 12 has been amended to show that status bits of a predetermined value indicate a change in the data element. Applicant submits that Claim 12 is now clearly defined, and respectfully requests allowance thereof.

Claims 13 and 14 have also been rejected under 35 U.S.C. §112 by the Examiner. Claims 13 and 14 have been revised to more clearly describe the invention, and Applicant respectfully requests allowance thereof.

Claim 15 has also been rejected under 35 U.S.C §112. Claim 15 has been amended to more particularly describe the invention, and Applicant respectfully requests allowance thereof.

Claim 16 has been rejected by the Examiner under 35 U.S.C. §103 and by 35 U.S.C. §112. For the reasons described in connection with Claims 1 and 11, Applicant submits that the present invention as described by amended Claim 16 is novel and unobvious over the prior art. Regarding the 35 U.S.C. §112 rejection, the Examiner stated that it was vague and indefinite for the reasons given in the rejection of Claim 1. Applicant is unable to find a rejection of Claim 1 under 35 U.S.C. §112. However, Applicant has amended Claim 16 to more particularly describe how the status bit indicates that a data element has been changed, as requested by the Examiner.

The Applicant has now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of Claims 1-16.

The Examiner has rejected to the drawings. Applicant will file new drawings upon indication of allowable subject matter.

The Commissioner is authorized to charge any fees or credit any overpayment of the Deposit Account No. 02-0275 of Baker, Mills & Glast.

Respectfully submitted,
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